DEPARTMENT OF THE NAVY
COMMANDER NAVY REGION SOUTHWEST
937 NO. HARBOR DR.
SAN DIEGO, CALIFORNIA 92132-0058

IN REPLY REFER TO:
5090
Ser N45JCB.bg/0186
June 14, 2005

Mr. John Robertus
Executive Officer
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 91123-4340

SUBJECT: NAVY COMMENTS ON TENTATIVE CLEANUP AND ABATMENT ORDER NO. R9-2005-0126 (PLRT:03-066.05:a lot, PLRP:03-0137.05:a lot)

This letter is written to object to the subject Tentative Cleanup and Abatement Order (Tentative CAO) and to communicate specific comments. In addition we reiterate the Navy's May 9, 2005 request for additional information regarding the subject Tentative CAO. To date, the Navy has not received any response to that request. We are renewing our request for technical information so that we can properly evaluate the staff's findings and conclusions in the Tentative CAO.

The Navy's comments and objections, briefly summarized, are as follows:

1. The Tentative CAO does not present any risk based scientific justification for its chosen remedy (or any action at all);
2. The Tentative CAO is contrary to the Navy's sediment policy and general principals contained therein that provide for a rational and fair approach to sediment response actions;
3. The Tentative CAO does not state the Water Board's legal basis for jurisdiction over sediments.

Enclosure (1), Navy comments on the Tentative CAO No. R9-2005-0126, provides the Navy's sediment policy and includes more detailed comments and questions intended to assist your staff in providing information explaining the rationale for decisions made in the Tentative CAO. Without this additional information, it will be very difficult for the Navy to participate in the workshops and subsequent hearings in a meaningful way.

In addition, our technical staff needs time to review any new information provided by your staff. Therefore, we also request a continuance on the June 29th workshop to at least 90 days after the staff provides a technical report supporting the Tentative CAO.

In closing, our partnership with your office to support the Total Maximum Daily Load (TMDL) process at Chollas and Paleta Creeks, and Naval Submarine Base is an example how well we can work together using proven scientific methods to address complicated issues. The agreed upon risked-based approach used at these locations would also be appropriate at the shipyard site. This is consistent with Navy policy on contaminated sediments, USEPA guidance, and provides the best protection of beneficial uses. We look forward to continuing to work with you and your staff on these important environmental concerns in San Diego Bay.

If you have any questions, my point of contact for this issue is Mr. Brian Gordon at (619) 524-6390.

Sincerely,

ANTHONY J. GONZALES
Captain, U.S. Navy
Program Director Environment

Enclosure: 1. NAVY Comments on the Tentative Cleanup and Abatement Order No. R0-2005-0126

June 14, 2005

Navy Comments on the Tentative Cleanup and Abatement Order No. R9-2005-0126

General Comments

The Department of Navy sediment policy requires the following to be accomplished before sediment can be remediated (CNO, 2002). This policy is generally consistent with the USEPA principals for contaminated sediment (USEPA, 2002).

1. All sources shall be identified to determine if the Navy is solely responsible for the contamination.
2. All investigations shall be linked to a specific Navy CERCLA/RCRA site.
3. All sediment investigations and response actions are to be consistent with Navy policies on risk assessment and background.
4. Sediment goals shall be developed based on site-specific information and be risk-based.
5. Navy shall not cleanup contamination from a non-Navy source where the Navy has not contributed to the risk in the sediments.
6. Navy will not cleanup a site before the source is contained.
7. A monitoring plan with "exit strategies" (specific criteria for determining when a cleanup has been successfully completed) shall be developed before collecting the first monitoring sample.

Regarding points 1-2 above, based on available information regarding the Shipyard Sediment Site, it is appears that sources have not been clearly identified or quantified, but rather that the Navy has been included as a Discharger on the order on the basis of speculation of discharges that may have occurred some 35-55 years ago. No specific documentation has been produced to suggest that any release actually took place from a Navy site. Further, there is no indication that the contamination can be linked to any identified Navy CERCLA/RCRA site.

Regarding points 3-4 above, while the investigations describe in the "NASSCO and Southwest Marine Detailed Sediment Investigation" (henceforth called the Shipyard Study) appear to be consistent with Navy policy on risk assessment and background, the limited analysis and conclusions produced by the California Regional Water Quality Control Board, San Diego Region (RWQCB) in the Cleanup and Abatement Order (CAO) clearly are not, especially with respect to the establishment of cleanup levels.

Regarding points 5 & 6 above, there is no specific evidence of a Navy release to the site from the dry-dock operated by the Navy. Thus any cleanup of contamination by the Navy would most likely be cleanup of a non-Navy source, which is against Navy policy. Further, given that ongoing sources that may impact the site have not been adequately characterized, it would be premature and against Navy policy for the Navy to contribute to a cleanup at this time.

Regarding point 7 above, the CAO establishes cleanup levels that are arbitrary, not site-specific, and not risk-based. There is no reason to believe that the cleanup levels that have been established in the CAO would not be challenged in the future as being inadequate to protect beneficial uses. Thus there is no clear exit strategy that can be tied to the cleanup levels established in the CAO. It is counter to Navy policy to participate in a cleanup and monitoring program for which there is no clear exit strategy.

Specific Comments and Questions by Finding and Directive

Finding 1:

1. In Finding 1, the RWQCB states that "... and the United States Navy have each caused or permitted the discharge of pollutants to the Shipyard Sediment Site resulting in the accumulation of pollutants in the marine sediment." The RWQCB provides no evidence that this is the case for the Navy. Simply having operated a floating dry-dock at the site does not show evidence of a release. Can the RWQCB provide any specific evidence that the Navy has caused the accumulation of pollutants at the site?
2. Unless specific, credible, scientific evidence exists that the Navy contributed ***significantly*** to the accumulation of pollutants at the site, the Navy should not be named in the CAO. The Navy has voluntarily taken the lead, worked in good faith, and expended considerable resources to assess the sediment sites at the mouths of Chollas and Paleta Creeks, as well as many other sites around San Diego Bay. The Navy is already working closely with the RWQCB to address sites where the Navy has potential responsibility.
3. The RWQCB conclusion in Finding 1 of the CAO that "...concentrations of these pollutants causes or threatens to cause conditions of pollution, contamination, and nuisance in San Diego Bay that adversely affects three categories of beneficial uses..." is in disagreement with the findings of the Shipyard Study which concluded that "...this comprehensive and detailed sediment investigation has demonstrated that shipyard-associated chemicals have a negligible impact on overall beneficial uses." The Shipyard Study was prepared in accordance with the guidelines provided by the RWQCB (RWQCB, 2001). The RWQCB has not provided any documentation to refute the findings of the Shipyard Study. The CAO provides no detailed basis for the conclusions of Finding 1. Given the contradiction between the CAO and the Shipyard Study, there is no clear pathway forward to remediation until these differences are resolved.
4. If the Navy was believed to have been a responsible party for the shipyard sediment, why was the Navy not notified prior to the commencement of the sediment investigations? The Navy has worked cooperatively and in good faith with the RWQCB on a number of ongoing sediment cleanup efforts in San Diego Bay. The RWQCB approach to this CAO seems counter to that cooperative relationship.

Finding 9:

1. In Finding 9, the RWQCB provides no credible, scientific evidence that the Navy contributed significantly to the accumulation of pollutants at the Shipyard

Sediment Site. As stated in the response to Finding 1, unless specific, credible, scientific evidence exists that the Navy contributed significantly to the accumulation of pollutants at the site, the Navy should not be named in the CAO. Can the RWQCB provide specific, direct evidence that the Navy improperly disposed of or released chemicals over 35 years ago that currently are present in the marine sediments of the NASSCO leasehold at levels that contribute to impairment?

2. Given that the Navy never implemented butyl tin based hull coatings, and that these coatings in general were not in wide use until the 1980s, provide specific, direct evidence that the Navy released butyl tin to the environment of the NASSCO leasehold.
3. Provide any historical documents that substantiate the claim that the Navy actually released any of these chemicals to the environment from the dry-dock operated at the Shipyard Site.
4. Provide any technical or historical documents that substantiate the claim that these chemicals would still persist in the environment at significant levels above background for over 35 years.
5. In Finding 9b, the RWQCB suggests that via non-point stormwater releases to Chollas Creek, the Navy "...has caused or permitted the discharge of these urban runoff pollutants into the Shipyard Sediment Site..." However, this is in contradiction to the RWQCB Guidelines For Assessment And Remediation Of Contaminated Sediments In San Diego Bay At NASSCO And Southwest Marine Shipyards (RWQCB, 2001) which states that "For the purposes of this assessment, background sediment chemical concentrations are defined as the current chemical concentrations in the sediment absent the existence of the shipyards (i.e., excluding the pollutant loading by NASSCO and Southwest Marine and ***considering urban storm water inputs only***)." That is to say, the background condition defined by the RWQCB already accounts for urban storm water inputs. Thus it is inappropriate to cite urban stormwater inputs from the Navy as a rationale for including the Navy as a Discharger in the CAO. This contention is further supported by RWQCB 2001 in the description of the selection process for reference stations "The reference stations should be representative of current water quality conditions of San Diego Bay, including bay-wide urban anthropogenic sources of pollutants and excluding sources of pollutants associated with shipbuilding and repair activities." By the RWQCB definition, urban inputs from non-shipbuilding and repair activities are considered to be part of background.

Finding 10:

1. Finding 10 of the CAO specifies that copper, mercury, PAHs and PCBs are impairing aquatic life, aquatic dependent wildlife and human health beneficial uses. As stated in the response to Finding 1, this is in disagreement with the findings of the Shipyard Study which concluded that "...this comprehensive and detailed sediment investigation has demonstrated that shipyard-associated chemicals have a negligible impact on overall beneficial uses." The Shipyard Study was prepared in accordance with the guidelines provided by the RWQCB

(RWQCB, 2001). The RWQCB has not provided any documentation to refute the findings of the Shipyard Study. The CAO provides no detailed basis for the conclusions of Finding 1 and Finding 10. Given the contradiction between the CAO and the Shipyard Study, there is no clear pathway forward to remediation until these differences are resolved. Can the RWQCB provide specific evidence of how these individual chemicals have been linked to impairment, and why the findings of the CAO, which are supposedly based on the data from the Shipyard Study, are in contradiction to the findings of that report?

Finding 11:

1. The RWQCB contends that the conclusions of the CAO are based on the information contained in the Shipyard Study. If this is the case, please explain the differences in conclusions with regard to impacts to beneficial uses between the CAO and the Shipyard Study. Does the RWQCB contend that the conclusions of the Shipyard Study are incorrect, even though they are based on the same information? Does the RWQCB contend that the information in the Shipyard Study is faulty? If so, how can the RWQCB draw accurate conclusions from that information?

Finding 12:

1. In Finding 12, the RWQCB concludes that the MIGR beneficial use is impaired at the Shipyard Site. The MIGR beneficial use is defined as "Beneficial uses of waters that support habitats necessary for migration, acclimatization between fresh and salt water, or temporary activities by aquatic organisms, such as anadromous fish." What information or studies were performed at the Shipyard Site the support the conclusion that the MIGR beneficial use is impaired, or that a MIGR beneficial use has ever existed for the Shipyard Site? To our knowledge, there is no information in the Shipyard Study or the CAO that support this conclusion.
2. In Finding 12, the RWQCB concludes that the EST beneficial use is impaired at the Shipyard Site. The EST beneficial use is defined as "Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds)." Can the RWQCB provide any evidence that estuarine ecosystems exist at the Shipyard Site? The most common definition of an estuary comes from Cameron & Pritchard (1963): "An estuary is a semi-enclosed coastal body of water which has free connection to the open sea and within which sea water is measurably diluted with fresh water derived from land drainage." Given the low level and sporadic nature of freshwater discharge to San Diego Bay, particularly in the area of the Shipyard Site, there is little evidenced to support the contention that an EST beneficial use exists at the site.
3. Given responses 1 & 2 above to Finding 12, the only aquatic life beneficial use that is significantly present at the Shipyard Site, or has been examined for impairment in the Shipyard Study and CAO is the MAR beneficial use. However, as stated previously, the Shipyard Study has concluded "...that shipyard-associated chemicals have a negligible impact on overall beneficial uses." Thus

while there may be evidence of chemical concentrations above background, there is no substantial technical analysis that supports the conclusion that there are significant impairments to aquatic life beneficial uses.

Finding 15:

1. In Finding 15, the CAO states that the Baseline Pool was selected to have "sediment total organic carbon (TOC) and grain size profiles similar to the Shipyard Site..." Comparison of the Shipyard Site data and the Baseline Pool data indicate that this criterion is not satisfied. Given that this Baseline Pool was developed by the Navy specifically for the assessment of the Chollas and Paleta Creek Sediment Sites, explain how this Baseline Pool is adequate for the determination of background for the Shipyard Site.

Finding 16:

1. The analysis that forms the basis for this the conclusions in Finding 16 is not described in the CAO or the Shipyard Study. Provide the basis for assignment of low-high rankings for individual lines of evidence, and the basis for the final assignment of likelihood for the weight of evidence.
2. Given that there are no lines of biological evidence that indicate a high level of impact, and there is only one station where moderate impact to toxicity and benthic community coincides, it seems difficult to support the conclusions of the weight of evidence analysis that impairment is likely at a majority of the stations. An assignment of moderate effects from toxicity analysis that is unsubstantiated by any observed benthic community degradation is indicative that the observed toxicity is not of sufficient magnitude to impact biological communities and populations at the site.
3. The Shipyard Study (Section 9.1.5) indicates that on-going activities at the shipyards impact the biological communities. This factor was not considered in the CAO, but according to the Shipyard Study "This strong association between apparent disturbance and benthic community alteration indicates that physical disturbance may be responsible for many of the apparent effects on benthic macroinvertebrates, and thus explains the lack of correlation between benthic macroinvertebrate effects and shipyard chemicals." The RWQCB should account for the potential effects of physical disturbance in the findings of the CAO because these effects will not be remediated through dredging. In addition, the Navy should not be held responsible for a cleanup that is based on effects caused by on-going activities at the shipyards.

Finding 18:

1. As stated by the RWQCB in Finding 18, comparison of total chemical concentrations in porewater to dissolved chemical criteria from the CTR is inappropriate. While filtration of samples for organic analytes is not generally recommended for porewater due to potential sorption losses, filtration for metals is acceptable and should have been conducted. The porewater results for metals should not be utilized for analysis of impairment to beneficial uses.

2. Why were porewater concentrations only compared to CTR? Using CTR is a way to describe the data against a level considered to be a threshold for effects. However, like SQGs in sediment, these thresholds should only be used as guidelines and therefore need to be considered against reference (which the shipyard did), and in a weight of evidence evaluation that considers porewater toxicity, and relationships to benthic community impacts. Why was the porewater analysis not included in the weight of evidence analysis?

Finding 19:

1. What does the RWQCB mean by the use of the term "nearly statistically significant"? This seems to imply vaguely that there could be an issue, when no issue was actually identified statistically. This type of language tends to detract from the credibility of the CAO in identifying impairment.

Finding 20:

1. In Finding 20, the RWQCB concludes that "...fish at the Shipyard Sediment Site are no more greatly exposed to PAH compounds than fish at the reference area in San Diego Bay." This conclusion is in contradiction to the findings of the ecological and human health findings where the RWQCB concludes that BAP is present at levels that contribute significantly to risk in excess of background. Given that both the ecological risk and human health risk are based to a large degree on the consumption of fish, how can it be that fish are no more greatly exposed to PAH compounds at the Shipyard Site, and yet the risk associated with BAP (a PAH) exceed that of background?

Finding 21:

1. The RWQCB identified indicator chemicals based on the relationship of representative classes of compounds to observed biological effects. Though no details are provided, it is assumed that the establishment of these relationships is based on regression analysis. Given the findings of the Shipyard Study that "Copper and chromium are each an intrinsic part of the crystal structure of the minerals in which they are found, and thus are not subject to sorption–desorption interactions with the surrounding water. A major fraction of the total mass of copper and chromium in these samples is therefore not bioavailable" and that "because other metals have distributions similar to those of copper and chromium they may also be associated with the smelter waste, and consequently also have low bioavailability" it would not be expected that effects would necessarily be directly correlated with the total metal content of the sediment. That is, high concentrations of metals could be present in the sediments in non-bioavailable forms that would lead to a poor correlation between the bulk sediment concentration and biological effects. How did the RWQCB account for these findings of the Shipyard Study?
2. Clarify what statistical relationship and level of significance was used to determine that an indicator chemical caused a biological response.
3. The Shipyard Study identified pesticides as a potential cause for toxicity effects observed at some shipyard sediment stations. These chemicals are not identified

in the CAO for cleanup, yet appear to be present in quantities that may be causing impairment. How will the RWQCB address impacts from pesticides found in shipyard sediments?

Finding 22:

1. Explain specifically how the BIOL beneficial use is impaired. The BIOL beneficial use is defined as "Uses of water that support areas or habitats that have been officially designated as biologically significant, such as established refuges, parks, sanctuaries, ecological reserves, and State Water Quality Protection Areas (SWQPAs), where the preservation of natural resources requires special protection." To our knowledge, there are no biological habitats of special significance officially designated in the Shipyard Sediment Site.
2. Finding 22 of the CAO concludes elevated levels of pollutants are impairing aquatic life beneficial uses at the Shipyard Site. As stated in the response to Findings 1 and 10, this is in disagreement with the findings of the Shipyard Study. The Shipyard Study clearly states the parameters and assumptions used in assessing ecological risk at the site and concludes that "Overall, the results of this risk evaluation indicate that chemical concentrations measured in prey and sediment of the NASSCO and Southwest Marine leaseholds are very unlikely to constitute an unacceptable risk to populations of aquatic-dependent wildlife potentially foraging at these locations. Therefore, the current conditions at the shipyards are protective of beneficial uses associated with aquatic dependent wildlife." The Shipyard Study was prepared in accordance with the guidelines provided by the RWQCB (RWQCB, 2001). The RWQCB has not provided any documentation to refute the findings of the Shipyard Study. The CAO provides no detailed basis for the conclusions of Finding 1, Finding 10, and Finding 22. Given the contradiction between the CAO and the Shipyard Study, there is no clear pathway forward to remediation until these differences are resolved.

Finding 23:

1. Can the RWQCB clarify the assumptions used in the ecological risk assessment? For example, while an area use factor of 1 may be appropriate for a screening level analysis, why would the RWQCB use this value for the Tier II assessment? Is there any scientific evidence to suggest that any of the assessment endpoints used in the study actually reside 100% of the time at the Shipyard Site? What other "conservative assumptions" were made, and how were they justified from a technical basis?

Finding 24:

1. The RWQCB states that several pollutants are contributing to "cumulative cancer risk" for ecological assessment endpoints. Cancer risk is generally not assessed specifically in a ecological risk assessment.

Finding 25:

1. The discussion of TRVs in this Finding is unclear. It states that BTAG TRVs were used for most chemicals, but that NOAEL TRVs were used when BTAG TRVs were not available. The BTAG publishes both low TRVs (NOAELs) and high TRVs (LOAELs). Thus saying that NOAEL TRVs were used does not necessarily distinguish these TRVs from the BTAG TRVs. The Finding does not state if low or high BTAG TRVs were used. The Finding does not state any of the other assumptions that were used to assess ecological risk (e.g. consumption rate, area use factors, fraction ingested from the site, etc.). Finding 11 states that unless otherwise noted, the data and technical information used in the CAO come from the Shipyard Study. Since no other sources are noted in this Finding, we must presume that the RWQCB used the same assumptions as the Shipyard Study for all these parameters, but came to completely different conclusions. Can the RWQCB clarify specifically how they arrived at different conclusions from the Shipyard Study while using the same underlying data?
2. The conclusions of Finding 17 indicated that there was no correlation between tissue chemistry and sediment chemistry for chromium and selenium. How can it be concluded in Finding 25 that there is an ecological risk associated with chromium and selenium that is different than background? Was there a correlation between tissue and sediment for these constituents for the prey items collected from the Bay?
3. The conclusion of Finding 20 that "fish at the Shipyard Sediment Site are no more greatly exposed to PAH compounds than fish at the reference areas in San Diego Bay" is in contradiction with the findings for ecological risk. Given that several of the bird species cited as being at risk due to exposure to BAP take a large proportion of their diet as fish, how can the risk to these birds be greater than background if the exposure for the fish is no different than background?

Finding 26:

1. Explain specifically how the REC-1 and REC-2 beneficial uses are impaired. The REC-1 beneficial use is defined as "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white-water activities, fishing, or use of natural hot springs." The REC-2 beneficial use is defined as "Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities." To our knowledge, the CAO does not address impairment or risk related to contact and non-contact recreational uses.

Finding 27:

1. The COMM beneficial use applies to "Uses of water for commercial, recreational (sport) collection of fish, shellfish, or other aquatic organisms including, but not limited to, uses involving organisms intended for human consumption, subsistence, and/or bait purposes." Clarify how this beneficial use is interpreted to include Subsistence Anglers.

Finding 29:

1. In Finding 29, the RWQCB concludes that human health risk is present at the Shipyard Site in excess of background based on potential exposure to arsenic, BAP, PCBs, copper and mercury. The Shipyard Study concludes that "In no case do risks exceed target risk levels. The existing conditions at the shipyards are protective of beneficial uses associated with human health." Can the RWQCB clarify specifically how they arrived at such different conclusions from the Shipyard Study while using the same underlying data?
2. How can there be one table of results for both Recreational and Subsistence Anglers when these two categories have different consumption rates? Does this mean that there is risk predicted for both categories?

Finding 31.

1. Background 95% UPL concentrations listed for metals consistently exceed those calculated by the Navy from the Chollas-Paleta Baseline Pool from about 5-20%. Given that the RWQCB used the same stations for the Shipyard Site, why are the UPL values biased high for metals?
2. For the Chollas-Paleta Study, the Navy and RWQCB jointly determined that grain size normalization was important for evaluating metal concentrations relative to background in sediments. Clarify how you derived the metal baseline pool concentrations (were they grain sized normalized?).
3. The 95% UPL value listed for PCBs should be in parentheses because 50% of the stations were non-detect.
4. The background sediment quality characteristics used for the Shipyard Site is taken directly from the site-specific Baseline Pool developed by the Navy and SCCWRP for the Chollas-Paleta Site. Given that this is a site-specific condition for that study, how can it be applied directly to the Shipyard Site? Has it been demonstrated that conditions at the Shipyard Site are so similar to the Chollas-Paleta Site that the same background condition can be used?
5. Given that the PPAH sum is dominated by HPAH, it appears to be a duplicative measure. What is the purpose of using both summations?

Finding 32.

1. In Finding 32, Why does the RWQCB invoke sediment disturbance as a rationale for dismissing natural attenuation and capping as remedial strategies, but ignores the role of this process in evaluating the benthic community characteristics?
2. The general trend in applying remedies at sediment sites is to use hybrid approaches that include a range of remedies within the site to deal with the range of conditions that are present in the most environmentally protective and cost

effective manner possible. This is especially critical at sites where economic infeasibility is cited, as is the case at the Shipyard Site. The best solution is likely to include a range of remedial strategies, not simply the default of dredging.

3. Natural recovery occurs in relation to a range of different natural processes. Areas that experience disturbance may still be good candidates for natural recovery. To determine if this is true, the processes that control recovery must be assessed in detail. This remedy should not be dismissed out of hand due to the possibility of disturbance.
4. Not all areas of the Shipyard Site will be subject to future dredging or disturbance. There may be significant areas that are amenable to capping and natural recovery remedies.
5. The technical feasibility analysis provided by the RWQCB does not consider risks associated with the proposed remedies. Often when these risks are accounted for, different conclusions may be reached as to the best alternative. Many of these risks are outlined in the Shipyard Study. Why has the RWQCB chosen to ignore this important aspect of remedy selection?
6. Large-scale application of dredging could result in serious natural resource injury to critical habitat such as sea grass beds. Has the RWQCB consulted carefully with natural resource trustees in weighing the potential risks associated with this remedy?
7. Given that the Shipyard Sediments are composed of ~70% fines, has the RWQCB contemplated the potential impacts of dredging residuals that could be transported and deposited over a large area of the bay? Has the RWQCB considered that dredging around structural elements at the shipyard may not be feasible and the possible consequences of having to leave these sediments in place for structural integrity of the bulkheads and piers? Given the limitations on horizontal and vertical delineation of contaminant concentrations, is the RWQCB confident that dredging will not expose even higher concentrations than are currently present at the site, leading to increased risk rather than reduction of risk?

Finding 33.

1. The Exponent LAET cleanup levels were developed in accordance with guidelines provided by the RWQCB (RWQCB, 2001). Why would the RWQCB select arbitrary values of five times background as cleanup levels, when scientifically based thresholds that were developed in accordance with RWQCB guidelines are available?
2. Cost of cleanup that do not include verification and monitoring costs are very misleading, especially with respect to capping and natural recovery, but also with respect to dredging. The economic evaluation should include these costs.
3. The CAO Summary Economic Feasibility table (continued) appears to have been developed using subjective rankings. What were the rules used to construct this table? What were the rules for the rankings? Also, the table appears flawed in that the natural recovery option, by definition should have, at a minimum, all zeroes in the table because the scores are supposed to be relative to a neutral baseline (i.e., current condition at the Shipyard Sediment Site). The fact that the outcome was not zero suggests that the rankings were made up as it was

constructed rather than following a set of specific rules. Even if subjective, the rules need to be applied systematically.

4. On what basis is it presumed that naturally recovery should be ranked with strong negative indexes for long-term effects? Even if no recovery occurred, the values for long-term effects should be zeroes.
5. It is unclear how the RWQCB met any community acceptance requirements. There will be significant truck traffic in the local neighborhood for up to 45 weeks.
6. The CAO does not include an exit strategy. Given that the RWQCB is not requiring cleanup to background, and the cleanup levels selected are not risk based, what strategy can be used to assure if a remedy is carried out, that the parties can walk away from the site with no additional requirements?

Finding 34.

1. Why were the cleanup levels based on background chemical concentrations rather than using a risk-based approach? How will cleanup to five times background meet water quality control plans and policies and attainment of water quality standards? Under Resolution 92-49, the regional board must demonstrate that "the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the concentration limit greater than background is not exceeded." There is no technical basis for the assertion that simply taking a multiple of background will result in a cleanup level that will achieve this goal. This goal can only be achieved by developing cleanup levels that are based on the site-specific risk assessment that was conducted for the site. A large body of regulatory and scientific evidence supports this contention. For example, the National Contingency Plan (NCP) requires that a baseline ecological risk assessment (ERA) be conducted at every superfund site. USEPA 1994 further specifies that "The purpose for conducting the ERA is to: 1) identify and characterize the current and potential threats to the environment from hazardous substance release, 2) evaluate the ecological impacts of alternative remediation strategies, and 3) establish clean-up levels in the selected remedy that will protect those natural resources at risk." Specific guidelines for implementing these risk assessments have been developed (USEPA, 1997). USEPA guiding principles for managing contaminated sediment risks include principle #8: "Ensure that sediment cleanup levels are clearly tied to risk management goals."
2. If the five times background approach is used, how will the cleanup goals be evaluated as having been attained? The cleanup goals identify specific concentrations for multiple chemicals. The five times background cleanup standard is only applicable to tributyltin, benzo[a]pyrene, and Total PCB Congeners. Though the CAO assumes that cleanup of these compounds to five times background will be sufficient to clean up the remaining chemicals, how will attainment be evaluated if one of the other chemicals do not meet their cleanup goal. Given that the cleanup level for some of these compounds is just above background level, how will their non-attainment be treated?
3. The Shipyard Study (Section 1.4.1) lists a number of on-going sources of contamination besides the past historical discharges at the shipyards. Navy policy

and common sense requires that the surface water, storm water, and Chollas Creek discharges be dealt with first before any remediation activities are considered.

Directives A-G:

1. As discussed in the Navy's comments to Findings above, the sediment quality levels specified in the CAO are inconsistent with Navy requirements for sediment cleanup which require that cleanup levels be site-specific and risk based. In addition, the RWQCB has provided no specific evidence that the Navy contributed significantly to the contamination at the Shipyard Site. Furthermore, there is major disagreement between the conclusions of the Shipyard Study and the CAO with regard to the necessity of any cleanup whatsoever. These disagreements are compounded by the lack of detailed analysis provided in the CAO, which makes evaluation of the validity of the conclusions reached by the RWQCB difficult to ascertain. Significant questions remain as to whether sources at the site have been controlled, whether impairment is present at the site, whether the impairment is the result of chemical contamination or ongoing physical operations at the Shipyards, whether dredging would be the best remedy, and whether a clear and acceptable exit criteria could be established based on the goals established in the CAO. Until these questions and disagreements are resolved, it would be imprudent, and inconsistent with Navy sediment policy for the Navy to "take all corrective actions necessary to cleanup contaminated marine bay sediment at the Shipyard Sediment Site…"
2. Based on the comments to Findings above, and adherence to Navy sediment policy, the Navy has no clear basis for participating in the development of a Remedial Action Plan, the implementation of such a plan, or verification and monitoring programs associated with such a plan.

References

RWQCB, 2001. Guidelines for assessment and remediation of contaminated sediments in San Diego Bay at NASSCO and Southwest Marine Shipyards.

U.S. Navy Chief of Naval Operations (CNO). 2002. Policy on Sediment Site Investigation and Response Action.

U.S. Navy Chief of Naval Operations (CNO). 2004. Navy Policy on the use of Background Chemical Levels.

Naval Facilities Engineering Command (NAVFAC). 2003. Implementation Guide For Assessing and Managing Contaminated Sediment at Navy Facilities.

USEPA. 1994. Role of the Ecological Risk Assessment In the Baseline Risk Assessment, Final. OSWER Directive # 9285.7-17.

USEPA, 1997. Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments.

USEPA, 2002. Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites, OSWER Directive 9285.6-08.

USEPA, 2001. Ecological Risk Assessment and Risk Management Principles for Superfund Sites (OSWER Directive 9285.7-28 P).